

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A process for preparing 3-pentenitrile by hydrocyanating 1,3-butadiene with hydrogen cyanide over at least one catalyst, the process comprising contacting 1,3-butadiene, hydrogen cyanide or both the 1,3-butadiene and the hydrogen cyanide with at least one microporous solid, and releasing the 1,3-butadiene, hydrogen cyanide or both the 1,3-butadiene and the hydrogen cyanide from the at least one microporous solid, hydrocyanating the 1,3-butadiene with hydrogen cyanide over at least one catalyst before the hydrocyanation, and regenerating the at least one microporous solid which had been contacted with 1,3-butadiene, hydrogen cyanide or both the 1,3-butadiene and the hydrogen cyanide or hydrogen cyanide by heating under reduced pressure in an atmosphere comprising one or more gases selected from the group consisting of noble gases, air and nitrogen, wherein the at least one catalyst comprises nickel (0).

2. (Previously Presented) The process according to claim 1, further comprising contacting hydrogen cyanide together with or separately from the 1,3-butadiene with the at least one microporous solid.

3. (Previously Presented) The process according to claim 1, wherein the at least one microporous solid includes tubes having beds, and the flow conditions of 1,3-butadiene are selected in such a way to provide plug flow characteristics over the at least one microporous solid.

4. (Previously Presented) A process for preparing 3-pentenitrile by hydrocyanating 1,3-butadiene with hydrogen cyanide over at least one catalyst, in the presence of at least one microporous solid.

5. (Previously Presented) The process according to claim 4, further comprising regenerating the at least one microporous solid by heating under reduced pressure in an atmosphere comprising one or more gases from the group consisting of noble gases, air and nitrogen.

6. (Previously Presented) The process according to claim 1, wherein the 1,3-butadiene has a content of acetylene which is less than 1000 ppm.

7. (Currently Amended) The process according to claim 1, wherein the at least one microporous solid is selected from the group consisting of aluminas and molecular sieves and has a ~~pore~~ particle size of from 0.01 to 20 mm.

8. (Previously Presented) The process according to claim 1, wherein the microporous solid has a porosity which is between 0 and 80% based on the particle volume.

9. (Currently Amended) The process according to claim 1, wherein the microporous solid is in extrudate form, or in round form ~~or in undefined form~~ as a result of fracturing.

10. (Currently Amended) The process according to claim 2, wherein the at least one microporous solid includes tubes having beds, and the flow conditions of the hydrogen cyanide are selected in such a way to provide plug flow characteristics.

11. (Previously Presented) The process according to claim 4, wherein the 1,3-butadiene has a content of acetylene which is less than 1000 ppm.

12. (Currently Amended) The process according to claim 4, wherein the at least one microporous solid is selected from the group consisting of aluminas and molecular sieves and has a ~~pore~~ particle size of from 0.01 to 20 mm.

13. (Currently Amended) A process for preparing 3-pentenitrile by hydrocyanating 1,3-butadiene with hydrogen cyanide over at least one catalyst, ~~the process comprising:~~
contacting at least one microporous solid with the 1,3-butadiene and hydrogen cyanide;
directing the the 1,3-butadiene and the hydrogen cyanide that had contacted the at least one microporous solid to a hydrocyanation reaction system;
hydrocyanating the 1,3-butadiene with hydrogen cyanide over at least one catalyst and
regenerating the at least one microporous solid that had been contacted with the 1,3-butadiene and hydrogen cyanide by heating ~~under reduced pressure~~ in an atmosphere comprising one or more gases selected from the group consisting of noble gases, air and nitrogen wherein

the at least one catalyst comprises nickel (0).

14. (Previously Presented) The process according to claim 13, wherein the at least one microporous solid includes tubes having beds, and the flow conditions of 1,3-butadiene and hydrogen cyanide are selected to provide plug flow characteristics over the at least one microporous solid.

15. (Previously Presented) The process according to claim 13 wherein the 1,3-butadiene has a content of acetylene which is less than 1000 ppm.

16. (Currently Amended) The process according to claim 13 wherein the at least one microporous solid is selected from the group consisting of aluminas and molecular sieves and has a ~~pore~~ particle size of from 0.01 to 20 mm.

17. (Previously Presented) The process according to claim 16 wherein the microporous solid has a porosity which is between 0 and 80% based on the particle volume.